

REMARKS

The Examiner has objected to the oath or declaration. A new declaration in compliance with 37 CFR 1.67(a) identifying the citizenship of inventor Joseph Austin has been filed. A copy of the declaration is attached to this document.

Claims 1-12 are pending in the application. In the above Non-Final Office Action the Examiner has rejected claims 1-12 in the manner discussed below.

Claim Rejections Under 35 U.S.C. §102

The Examiner has rejected claims 1-12 as being anticipated by Gersbach et al, US Patent 5,508,660, under 35 U.S.C. § 102(b). Applicant respectfully traverses.

Gersbach Disclosure

Gersbach is directed to a phase-locked loop charge pump circuit with a current mismatch compensation circuit (Abstract). Gersbach provides a means for correcting mismatch between charge pump up and down current signals provided to the phase-locked loop VCO (see, e.g., FIG. 2). However, it is important to note that the circuit of Gersbach fails to match the charge pump core circuit switches in the replica circuit (see H17 and H3 which are not matched in the replica circuit). This results in a static replica circuit that fails to match the up and down charge currents over the range of voltages developed at the output (node 31 in FIG. 2).

Differences Between Gersbach and the Present Invention

Aspects of the present invention, as for example are described in claims 1, 3, and 6 as amended, are directed towards a buffer circuit to buffer a received control voltage. The Examiner asserts that Gersbach describes such a buffer circuit, citing element 46 as shown in, for example, FIG. 2. Applicant respectfully submits that element 46 is not a buffer circuit. More specifically, element 46 is shown with the non-inverting input connected to node 31 and the inverting input connected to node 49. The output, however, is connected to transistor elements T4 and T5, arguably operative to drive these transistors to generate an output such as the output at node 49. In order to be configured as a buffer, element 46 would require having the output connected back to the input, as is typically done in op-amp circuits by connecting the output to the inverting input. Consequently, element 46 is not a buffer. Accordingly, Gersbach fails to describe or suggest all elements of the present invention, including a buffer to receive a control voltage and output the control voltage to a replica circuit.

Additional aspects of the present invention, as for example are described in claims 2 and 9, are directed towards a replica circuit. The Examiner claims that Gersbach describes such a replica circuit, citing transistors T7 & T8 as shown in, for example, FIG. 2. Applicant notes that the circuit comprising T7 & T8 as cited by the examiner fails to replicate important characteristics of the charge pump core circuit, in particular the switching elements, shown as H17 and H3 in FIG.2. As such, the circuits of Gersbach may provide some degree of replication of the charge pump core circuit, however, they fail to account for one or more characteristics of the core circuit including the switching elements.

Notwithstanding the above arguments distinguishing the replica circuit of the present invention, in order to further prosecution Applicant has amended claims 2 and 9 to further clarify that substantially identical switching characteristics characterize operation of switching elements within the charge pump core circuit and replica circuit. Accordingly, since the circuit T7 & T8 of Gersbach fails to match the switching characteristics of the charge pump core circuit and consequently provides a static rather than dynamic replica circuit, Gersbach fails to describe or suggest all elements of the present invention, including at least the replica circuit as described in claims 2 and 9 as amended.

Additional aspects of the present invention, such as are described in, for example, claims 5 and 12, are directed to a servo coupled to a replica circuit. The Examiner asserts that Gersbach describes such a servo circuit, citing merely a circuit node (“*a combination circuit (inherently included at the intersection node of (H4, H17, T2)* for combining a charge up current outputted from (H4) and a bias current outputted from (T2), (*the combination circuit considered here equivalent to the limitation “servo circuit”*)” (emphasis added)). Applicant submits that the combination circuit cited by the Examiner is merely a circuit node, not a servo circuit as the Examiner asserts. As such, the node cited by the Examiner merely combines the current in transistor T2 with the charge pump core circuit current from H4. Nowhere in this description does the node at the intersection of H4, H17, and T2 act functionally as a servo circuit consistent with the understanding of one skilled in the art. See, e.g., “Servo Circuit Controls Sine-Wave Amplitude” by Darren O'Connor, *Electronic Design*, September 15, 2005 (<http://www.elecdesign.com/Articles/Index.cfm?AD=1&ArticleID=11029>). Consequently,

Gersbach fails to describe or suggest all elements of the present invention, in particular a servo circuit. Moreover, even if it is possible for a servo circuit to be inherently included in a portion of the circuit as described in the reference, it is inappropriate per applicable case law and MPEP § 2112 IV to conclude such inherency must exist if it is only a possibility and not a necessity:

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). “To establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.’ ” *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted).

In addition, with respect to claims 5 and 12, the Examiner asserts that Gersbach also includes a “driver circuit.” The Examiner cites element H17 (“*a driver circuit (H17)* coupled between the servo circuit and the charge pump core circuit” (emphasis added)). Applicant respectfully submits that the Examiner misconstrues element H17. Specifically, Gersbach describes that “PFET H4 is connected to filter node 19 of FIG. 1 by *a pass gate PFET H17*” (Col. 4, lines 44-46 emphasis added, see also FIG. 2). Gersbach’s description of H17 is not a drive circuit but merely a circuit switch (i.e. a pass gate) configured to turn on or off the “-INC” current. Consequently, Gersbach fails to describe or suggest all elements of the present invention, in particular a driver circuit.

Based on at least the above arguments and claim amendments, Applicant respectfully submits that Gersbach fails to anticipate all elements of the present invention, including at least

elements directed to a buffer, a replica circuit, and a servo circuit. Therefore Applicant requests that the Examiner's rejection under 35 U.S.C. § 102(b) be withdrawn and claims 1-12 as amended be allowed.

New Claims

Applicant notes that additional claims 13-21 have been added. In light of at least the specification, cited art, and arguments presented above, these claims should also be in condition for allowance. For at least these reasons, Applicant requests that new claims 13-21 also be allowed.

Concluding Comments

It is believed that all of the pending claims have been addressed in this paper. However, failure to address a specific rejection, issue, or comment does not signify agreement with or concession of that rejection, issue, or comment. In addition, because the arguments made are not intended to be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim except as specifically stated in this paper.

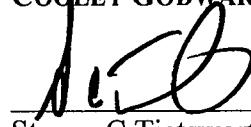
Applicant respectfully requests consideration of the remarks herein prior to further examination of the above-identified application. The undersigned would of course be available to discuss the present application with the Examiner if, in the opinion of the Examiner, such a discussion could lead to resolution of any outstanding issues.

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